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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,375	10/07/2003	Hirohisa Ohta	Q77821	4285

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EXAMINER	
BOES, TERENCE	

ART UNIT	PAPER NUMBER
3682	

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,375	OHTA ET AL.	
	Examiner	Art Unit	
	Terence Boes	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitations "...a first and a second end in a direction of a motor central axis..." appearing in claims 1 and 7, lines 4-5 render the claims indefinite. Is applicant claiming that the first and second end are ***oriented*** or ***aligned*** in a direction of a motor central axis, or is applicant claiming that the first and second end are ***located*** in a direction of a motor central axis i.e. on a specific side? It is unclear what the recitation "...a first and second end in a direction of a motor central axis..." is claiming. Furthermore, is applicant claiming both the first and second ends, together, in a direction of a motor central axis, or rather, is applicant claiming just the second end in a direction of a motor central axis?

Claim Objections

2. Claim 7 is objected to because of the following informalities: The recitation "...rotor being having magnets..." appears to be a typographical error. The examiner suggests deleting " being". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. US 2002/0043880 in view of Scott US 2002/0063492.

Suzuki et al. disclose:

Re clm 1

- A stepping motor (figs 2A, 2B)
- Exterior casing (13) having a first end and a second end in a direction of a motor central axis.
- A motor central axis (axis extends through center of shaft 30)
- A stator (10)
- A rotor (20) rotatably disposed inside said stator around said motor central axis,
- Rotor having magnets (21) constituting magnetic poles mounted to an outer circumferential surface of a cylindrical a cylindrical bushing (26, or 56)
- Shaft (30) having a first end (threaded end engaged with 21, 23, 56) and a second end (threaded end engaged with 32)
- Said second end projects outward from said exterior casing at a position of said motor central axis
- A housing (33) linked to said second end of said exterior casing in said direction of said motor central axis,
- Said housing accommodating a projecting portion of said shaft (30,60)

- A power conversion mechanism (31,30,23)
- An operating member (32) disposed outside said housing in said direction along said motor central axis
- Wherein said first end of said shaft is movably engaged with said bush (see figure 2C, first end of said shaft 30 is indirectly movably engaged with 26 in linear feed screw manner, furthermore the prior art figure 1B clearly discloses first end of said shaft 60 is directly movably engaged with 56 in linear feed screw manner)

Suzuki discloses all of the subject matter as discussed above. Suzuki does not disclose Neodymium rare-earth magnets.

Scott teaches Neodymium rare-earth magnets for the purpose of providing adequate flux density (P1/Paragraphs 5-6)

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Suzuki and provide Neodymium rare-earth magnets, as taught by Scott, for the purpose of providing adequate flux density.

Suzuki et al. further disclose:

Re clm 2

- An internal thread portion (52) is formed on an inner peripheral wall surface of said bushing (56)
- An external thread portion (60,30) on said first end of said shaft
- Said shaft is mounted to said bush (see fig 1B).

Examiners note regarding the recitation "...by screwing said external thread...": product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (see MPEP 2113).

- Said second end of said shaft projects outward (see fig 1B, shaft projects from casing and is accommodated by said housing)

Re clm 3

- Said power conversion mechanism is provided with:
- Rotation regulating projection portion (31) projecting radially outward on a portion of said shaft that projects outward from said exterior casing (see fig 2B)
- A guide groove (see figure 1A, guide groove is shown accommodating 31) disposed so as to extend along an inner wall surface of said housing such that a groove direction of said guide groove is aligned with said direction of said motor central axis
- Said rotation regulating projection portion fitting loosely into said guide groove (Paragraph 30 states that shaft 30 moves in an axial direction indicating that (31) fits "loosely").

Re clm 4

- Said second end of said shaft projects outward from said housing along said direction of said motor central axis.
- said operating member is mounted to a second end portion of said shaft (see Fig 1A).

Re clm 5

- Said operating member is formed integrally on a tip portion of said shaft projecting outward from said housing (see figure 1A)

Examiners note regarding the recitation "...by injection molding...": product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (see MPEP 2113).

4. Claim 7,10, and 11, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. US 2002/0043880 in view of Jenkin USP 3,639,791.

Re clm 7

- A stepping motor (figs 2A, 2B)
- Exterior casing (13) having a first end and a second end in a direction of a motor central axis
- A motor central axis (axis extends through center of shaft 30)
- A stator (10)
- A rotor (20) rotatably disposed inside said stator around said motor central axis,
- Said rotor having magnets (21) constituting magnetic poles
- Outer circumferential surface of a cylindrical bushing (56)
- An internal thread portion (52) on an inner peripheral wall surface of said bushing

- Shaft (30) having a first end and a second end
- Said second end projects outward from said exterior casing at a position of said motor central axis
- A housing (33) linked to said second end of said exterior casing in said direction of said motor central axis.
- Said housing accommodating a projecting portion of said shaft (30,60)
- A power conversion mechanism (31,30,23)
- An operating member (32) mounted to a second end portion of said shaft projecting outward from said housing.

The examiner considers this structure capable of operating a transmission control valve.

Suzuki does not disclose a penetrating aperture is disposed through a first end of said exterior casing so as to communicate between interior portion of said bushing and an exterior portion of said exterior casing, nor does he disclose a filter disposed so as to cover said penetrating aperture from said second end of said exterior casing.

Jenkin teaches a penetrating aperture (36) is disposed through a first end of said exterior casing so as to communicate between interior portion of said bushing and an exterior portion of said exterior casing, and a filter (38) disposed so as to cover said penetrating aperture from said second end of said exterior casing for the purpose of circulating fluid, providing a communicating fluid flow path with a filter, and filtering contaminants from fluid to provide for smooth operation and extended life.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Suzuki and a penetrating aperture with a filter, as taught by Jenkin, for the purpose of circulating fluid, providing a communicating fluid flow path with a filter, and filtering contaminants from fluid to provide for smooth operation and extended life.

Re clm 10

- Rotation regulating projection portion (31) projecting radially outward on a portion of said shaft that projects outward from said exterior casing
- A guide groove (see figure 1A, guide groove is shown accommodating 31) disposed so as to extend along an inner wall surface of said housing such that a groove direction of said guide groove is aligned with said direction of said motor central axis
- Said rotation regulating projection portion fitting loosely into said guide groove (Paragraph 30 states that shaft 30 moves in an axial direction indicating that (31) fits "loosely").

Re clm 11

- Said operating member is formed integrally on a tip portion of said shaft projecting outward from said housing (see figure 1A)

5. Claims 8 and 9, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. US 2002/0043880 in view of Jenkin USP 3,639,791 and further in view of Scott US 2002/0063492.

Suzuki discloses all of the subject matter as discussed above. Suzuki does not disclose Neodymium rare-earth magnets.

Scott teaches Neodymium rare-earth magnets for the purpose of providing adequate flux density (P1/Paragraphs 5-6)

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Suzuki and provide Neodymium rare-earth magnets, as taught by Scott, for the purpose of providing adequate flux density.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. US 2002/0043880 in view of Jenkin USP 3,639,791.

Suzuki does not disclose a cover penetrating aperture disposed on a first end of said exterior casing, nor does he disclose a filter disposed inside said exterior casing adjacent to said cover penetrating aperture.

Jenkin teaches a cover penetrating aperture (36), and a filter (38) disposed inside said exterior casing adjacent to said cover penetrating aperture for the purpose of circulating fluid, providing a communicating fluid flow path with a filter, and filtering contaminants from fluid to provide for smooth operation and extended life.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Suzuki and a cover penetrating aperture with a filter, as taught by Jenkin, for the purpose of circulating fluid, providing a communicating fluid flow path with a filter, and filtering contaminants from fluid to provide for smooth operation and extended life.

Response to Arguments

7. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments filed 09/07/2006 with regard to claims 7, 10, and 11 have been fully considered but they are not persuasive.

Applicant argues:

a. The examiner has failed to establish prima facie obviousness because Jenkin is non-analogous art.

i. In response, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the prior art is both in the same field of endeavor (motor type actuators) and is reasonably pertinent to the particular problem with which the applicant was concerned.

(1) Applicant asserts that Jenkin is directed to a hydrostatic air bearing.

(a) The examiner asserts that Jenkin is also directed to a motor type actuator comprising the same components as the applicant's invention, ie. A motor (15), including a rotor (14) type device.

(2) Applicant asserts that there is no correlation of any degree between the problems addressed by Jenkin and that resolved by Applicants' with regard to the presently claimed invention.

(b) The examiner asserts that both the applicant and Jenkin utilize a filter and an aperture within a motor casing to remove contaminents.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terence Boes whose telephone number is (571) 272-4898. The examiner can normally be reached on Monday - Friday 9:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TB
11/13/06

RICHARD RIDLEY
SUPERVISORY PATENT EXAMINER